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AESTRACT

Three basic questicns concerning preschool education are discussed using information derived frcm research in early childhcod education through 1963-1971. The questions are: (1) Does preschool education make a difference in later school perfcrmance of disadvantaged children? (2) If preschccl education does make a difference, does it matter which curriculum theory is employed? and (3) How can educators guarantee effective preschool education? Findings indicate that (1) Preschool experience can make a difference for disadvantaged children. A few special situations have offered immediate positive impact in terms of their stated goals. Long-term data are not yet available. (2) Frcm four types of curricula (Prcgrammed, Cpen Framework, Child-Centered, and Custodial) two points can be made. First, children profit frcm any curriculum that is based on a wide range of experiences and second, the successful curriculum guides the teacher in adapting theory to the actual behaviors cf children and (3) A successful program requires an effective staff model which in turn relies on planning and supervision. Educators shculd feel free tc develop any curriculum that can be adapted to the needs of the children and the requirements of their staff model. (WY)

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RELATIONSHIP OF CURRICULUM, TEACHING, AND LEARNING IN PRESCHOOL EDUCATION*

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The most pressing problem facing preschool education as part of the total compensatory education effort is to understand the conditions necessary for the operation of effective preschool education programs. We've come a long way from the early 60's and the simple questions regarding preschool's effectiveness in helping disadvantaged children develop social-emotional, cognitive, and language skills for success in later school years. We've also developed beyond the point where endless discussions about whether or not my theory is bigger and stronger than your theory have any meaning. Yet the stage is only now being set for the massive attention that must be given to problems of implementation if preschool is to have a permanent place in the educational scene and not become another expression of "doing good" for children . . . an elaborate Christmas-basket approach to education that has been typical of philantropic efforts in the field of social services.

The transition to this new stage is not complete, and there is still considerable debate about the direction in which research efforts should go. It is difficult to discuss this problem because the field of compensatory preschool education is littered with debris from the battles of the last decade between the ideas of traditional child-development educators and the newer structured approaches espoused by educational researchers.

I would like to stand aside from this debate and discuss three basic questions concerning preschool education using information derived from our research of the last eight years. These are: 1) Does preschool education make a significant difference in later school performance of disadvantaged children? 2) If preschool education does make a difference, does it matter which curriculum theory or method is employed? and 3) How can we guarantee effective preschool education?

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Does Preschool Education Make a Difference?

From many points of view to ask that preschool education demonstrate effectiveness as treatment is naive, for we seldom ask

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this type of question about educational efforts. For example, while a number of states have adopted statewide kindergarten programs, one seldom hears of comparison studies of achievement rates between those children who had kindergarten and those who did not. Some school systems have omitted certain grades, having all children skip from, say, seventh to ninth grade. Achievement differences between high-school graduates of such systems and graduates who have had the "benefit" of eighth grade are seldom reported. Yet the question whether preschool education makes a difference has been the subject of much debate. For example, the demand that preschool education make an impact on later performance is the major issue in the current criticism of Head Start, and it is the major research focus of the Head Start Planned Variation Study being conducted by the Office of Child Development. What will be the evidence upon which to judge the impact of preschool experience? Will scores from standardized intelligence and achievement tests be used? Or perhaps scores from measures of creativity or problem solving? How about indices of changed attitudes toward education and society in general or of beneficial effects on younger brothers and sisters? The lack of agreement on criteria is a major stumbling block to answering questions about the impact of preschool education. If, however, the criterion of scores on standardized tests is employed, a partial answer to the question of preschool effectiveness can be found in the research of the past decade.

A number of writers have presented reviews of the early history of the preschool movement. The contributions of such early educators as Comenius, Forebel, Oberlin, Montessori, and McMillan have been summarized by Brittain (1966), Kraft et al. (1968), and Horowitz and Paden (1970). The main impact of these early educators was to create a climate for the serious consideration of the education of the young. They recognized that the experience of early childhood formed the basis for later learning. They tended to stress the value of play, and they often recommended that children be provided with special environments to develop maximally. Montessori developed a special curriculum, complete with new materials and methods. McMillan labored to make nursery schools a part of the English education system. Oberlin saw early education as a way of curing the world of its ills by teaching his view of utopia.

Reviewers of preschools before the 1960's wave of compensatory education programs found that most of the information available was on middle-class children enrolled in laboratory schools or on projects of such limited scope that the data were meaningless. Fuller (1960), Sears and Dowley (1963), and Swift (1964) provided excellent reviews. Swift summarized the literature by saying that although there is no evidence that preschool helps a youngster, there also is

no evidence that it harms him (hardly a statement destined to elicit wild optimism about the potential of compensatory education).

There was little concern in these early reviews with the issues that are the focus of current preschool programs for the disadvantaged. For example, few projects listed the cognitive aspects of child development as a goal of their programs. Sears and Dowley (1963) recognized this when they commented: "It is curious that in the stated aims and purposes of the nursery school, intellectual development of the child has been very little considered." The kinds of concerns given attention in the traditional nursery school are quite different from those emphasized in the modern cognitively oriented preschool programs.

On the whole, then, the early reviews summarized information about middle-class children attending college-laboratory and church-affiliated nursery schools and reflected the deep concern of traditional nursery school education with "the achievement by the child of some emotional independence of adults without undue side effects such as anxiety or insecurity." (Sears and Dowley, 1963, p. 823) They also reflected a philosophical commitment to the freedom of the nursery school teacher to deal independently and intuitively with her children; this view assumes that there is no need to follow a curriculum based on specific cognitive or language theories. The ideal is the master teacher responding to the "needs" of the children as seen from her vantage point of general knowledge about child development and personal wisdom and experience (Weikart, 1970).

Of concern in this paper is information that would indicate whether preschool made a difference in later performance as measured by standardized tests or other clear criteria. Data are available from several studies which have passed beyond the category of immediate results and into long-term follow-up status. The most complete is that by Skeels (1966), who reported 30-year follow-up results of an early preschool and adoption study by the Iowa Child Welfare Station. The social and occupational adaptation of the experimental children who eventually went into adoptive homes was impressive when compared to the almost total lack of adjustment on the part of the control children who did not participate in preschool and who remained institutionalized. This finding gives considerable strength to the notion that while immediate impact of a project may be difficult to ascertain, long-term results may be favorable when the intervention results in a basic improvement in the general environment of the child. Since the youngsters in the control group were unable to leave the state institution and did not have the opportunity to live in a normal environment, the results may be seen as evidence of a contrast between "normal" and deprived environments.

A second study is by Gray and Klaus (1969). The children in their experimental group attended two or three summers of preschool and had one or two years of weekly home teaching by a trained staff member from the project. In their seven-year follow-up report, they concluded that while threre seemed to be definite spreading of their project's impact to other children in the community and to younger siblings, by fourth grade there were no significant achievement differences between control and experimental groups. There was, however, a significant difference in Stanford Binet IQ scores in favor of the experimental children. It is a remarkable achievement to have sustained an impact on intellectual development through the seventh year of a study and four years after formal intervention.

Karnes (1969) conducted a curriculum comparison study. Two structured curricula (the Ameliorative curriculum, operated by Karnes, and the Direct Verbal curriculum, operated by Bereiter and Engelmann) were compared, and a traditionally oriented nursery program was used for baseline data instead of a no-treatment control group. At the end of the first grade, there was no difference in Stanford-Binet scores between the children in the two experimental programs on the one hand and those in the traditional group on the other. However, the general academic progress of the children in the two experimental programs was better than that of the children in the traditional program.

The fourth longitudinal project that I wish to discuss is the Ypsilanti Perry Preschool Project (Weikart, Deloria, Lawser, Wiegerink, 1970). While the study is not complete in that follow-up is still underway with the oldest children in seventh and the youngest in third grade, enough data are available on the first five years of the project for some tentative statements.

This project was an experiment to assess the longitudinal effects of a two-year preschool program designed to compensate for functional mental retardation found in some children from disadvantaged families. The program consisted of daily cognitively oriented preschool classes accompanied by weekly home-teaching visits. The project was operated from September 1962 to June 1967. The population from which the sample was selected was black and economically disadvantaged. Children were assigned to either an experimental or a control group in an essentially random manner, except that the two groups were matched on socio-economic status and Stanford-Binet scores. Instruments used to evaluate program impact were the Stanford-Binet, the Leiter International Performance Scale, the Peabody Picture Vocabulary Test, the Illinois Test of

Psycholinguistic Abilities, the California Achievement Test Battery, several parent-attitude instruments, and teacher ratings of children.

The preschool curriculum that evolved during the five years of the project was derived mainly from Piagetian theory and focused on cognitive objectives (Weikart, Rogers, Adcock, McClelland, 1971). Emphasis was placed on making the curriculum flexible enough for the teacher to gear classroom activities to each child's level of development. Verbal stimulation and interaction, sociodramatic play and the learning of concepts through activity were considered more important than social behavior and other traditional concerns of nursery schools. Weekly afternoon home-teaching visits provided each family with an opportunity for personal contact with the child's teacher. The parents were encouraged to participate in the instruction of their children, the goal being to improve their relationship with school and teachers and to involve them in the educational process. The teacher's child management techniques indirectly suggested to the mother alternative ways of handling children. Group meetings were used to reinforce the changes in parents' views regarding the education of their children.

Five pairs of experimental and control groups were used in five replications of the basic experiment. This technique, referred to as small sample replication, offered two advantages which helped enhance the conclusiveness of the results: first, by using a small sample in each replication, better quality control of the classroom operations could be achieved; second, consistent results from the five independent experiments were far more convincing than a single significant result. Each of the five pairs of experimental and control groups was called a "wave," and given a number from 0 through 4. Waves 0 and 1 started preschool in the fall of 1962. Wave 4, the last wave, began in the fall of 1965 and completed the second year in June 1967. Each new wave of children began at age three and remained in the program for two years.

The general findings from the project are:

1. The children who participated in preschool obtained significantly higher scores on the Stanford-Binet IQ test than the control group children. This superior functioning disappeared by third grade. (See Table 1.)

Insert Table 1 about here

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2. The children who participated in preschool obtained significantly higher scores on achievement tests in elementary school than the control group children. This difference attained significance in first and third grades. (See Table 11.)

Insert Table 11 about here

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3. The children who participated in preschool received better ratings by elementary school teachers in academic, emotional, and social development than the control group children. This difference continued through third grade.

While there is a range of other important research projects not described here (see, for example, Hodges, McCandless, and Spicker, 1967; Di Lorenzo, 1968; and Beller, 1969) the current compensatory preschool projects all tend to support one specific conclusion: Experimental projects in which researchers have direct control of the curriculum, the operation of the project, and the research design seem to offer potential for immediate positive impact in terms of their stated goals. (Weikart, 1967; Gray, 1969; Horowitz and Paden, 1970) Such projects can produce measurable impact on intellectual, academic, and social-emotional growth as long as four years after the preschool intervention. Preschool experience can make a difference for disadvantaged children. Unfortunately I am speaking only of special situations. The findings of Hawkridge, et al. (1968), the critical review by Freeman (1970), and the Westinghouse study of Head Start (1969) point up the fragility of this conclusion when applied to the field of preschool education beyond special research projects.

Does it Matter Which Curriculum is Employed?

Since preschool can make a difference under certain conditions, it is important to know if the wide range of early education curricula have differential impact on children. While it is unlikely that any particular program with a given orientation is more effective than any other similarly styled program, it would seem reasonable to assume that general approaches differ significantly in their ability to help preschool children. Before discussing a project designed to examine the differential potential of three major general approaches, I would like to present an organizational scheme for the various preschool models.

Most preschool programs may be placed under one of four categories: Programmed, Open Framework, Child-Centered, or Custodial.*

Insert Figure 1 about here

In Figure 1, each of these program types is related to the way teachers and children in such programs participate and interact, in other words, to the teachers' and children's "roles." If the teacher's predominant role is to initiate, she plans lessons, organizes projects, and develops activities; she decides what will be done or directly influences what will be done; she presents materials, programs, and ideas; she guides action and directs the efforts of the children. The initiating, or active, teacher usually follows a specific theoretical position, developing her classroom activities from its tenets or following specific procedures prescribed for her. Indeed, an "initiating teacher" can even be a programmed textbook or a sophisticated computer terminal from which a theory of instruction interpreted by a program developer may be applied through carefully controlled materials. In general, the teacher who initiates is forceful in applying her talents and skills to accomplish specific instructional objectives.

If the teacher's predominant role is to respond, she watches the actions of both individual children and groups of children in the classroom environment. She responds to their needs and tries to facilitate their interaction with each other and with the materials in the classroom. While she will introduce materials and activities at specific points, she does this in response to what she feels are the expressed needs of the children. To ascertain these needs, the responding teacher applies the general knowledge of child development she has gained through training and experience. On the whole, the teacher responds carefully through her essentially intuitive understanding of the children's behavior.

When the child initiates, he is engaged in direct experience with various objects through manipulation and full use of all his senses; he is involved in role play and other kinds of fantasy play; and he is active in planning his daily program, determining how he will work in the classroom environment. There is considerable physical movement by the child and a balance among teacher-child, child-child, and child-material interaction patterns. In general the impetus for learning and involvement comes from within the child.

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*Of course any system of categorization is a deliberate simplification of the real world. Categories overlap in practice; many preschool programs are eclectic, mixing parts of various general approaches. These "mixed" models are to be found mostly in situations removed from the requirements of a rigorous research design.

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When the child responds, he is attentive or receptive; he listens to the teacher and carries out her requests; and he responds verbally to requests and demands. The responding child tends to move about the classroom less than the initiating child since his predominant role is to wait for and attend to what is prepared and presented to him. In general this child is working within a clear framework of acceptable behavior and progressing toward a specified goal.

Each of the four preschool types -- Programmed, Open Framework, Child-Centered, and Custodial -- is, among other things, a particular combination of these styles of teacher-child interaction. They will be discussed next.

Programmed. This model combines teacher initiates and child responds. Several major innovative programs in the current wave of compensatory preschool projects are Programmed curricula. These curricula tend to be directed at clearly defined educational goals such as the teaching of reading, language skills and math skills. Although the program developers show little respect for traditional education at any level, the goal of many of these programs is to equip the youngster with the skills necessary to manage the demands of such education. These curricula tend to be rigidly structured with the teacher dominating the child and with a heavy emphasis on convergent thinking -- "Say it the right way" -- and learning through repetition and drill. The programs tend to be oriented to specific procedures, equipment, and materials, especially in those approaches that are heavily programmed with technology ranging from simple language master and tape components to major learning systems with computers and all the trimmings.

The key to the programs in this quadrant is that the curricula are teacher proof; that is, the curricula are prepared scripts and not subject to extensive modification by the individuals presenting the instructions. As one major exponent of teacher-proof methods said, "If you use my program, 75% of everything you say will be exactly what I tell you to say!" Usually these programs are produced by a central group of program developers and then published or distributed for general use by interested school systems and parent groups. Since these programs assume that everything can be taught by the careful control of the student response, many of them use behavior modification techniques.

The major advantage of the curricula in this quadrant is their ease of distribution to the general field of preschool education, as

the performance of the child is keyed to the materials and not to the creative abilities of the teacher. This means that relatively untrained paraprofessionals as well as sophisticated and experienced professionals can effectively use these curricula with little difficulty. In addition, the teacher-proof characteristic appeals to angry parent groups who question the motives or commitment of teachers and who want full teacher accountability for the time their youngsters spend in school. These parents want their children to be taught to read and write and do arithmetic, and these programs do that job without any nonsense. Many school administrators also like these kinds of programs as they provide effective control of their teaching staff and lend themselves to ordering equipment and supplies in logical units.

Another advantage of Programmed curricula is the ease with which new components may be added as they become necessary or identified. For example, another innovator in the Programmed area was critized because of the failure of his methods to permit creative experiences for the children. He commented, "If you'll define what you mean by creativity, I'll develop a program to teach it." Then too, these curricula do not make a priori assumptions about the limitations of individual children. The challenge for the teacher is to find out the present limits of the child's knowledge in the area of concern and begin an instructional program to bring him to a well defined point of competence.

In general, these curricula have clearly defined educational objectives, present a carefully designed and extensive program sequence to move children toward those objectives, and give the teacher explicit instructions as to how to behave during these learning sequences. Teaching is accomplished through the application of scripted materials supplied by the program developers. Learning is seen as the acquisition of correct responses as determined by the materials; anything can be taught to almost any child if the educational goals and behavioral objectives can be specified. The principles which support these programs tend to be drawn from learning theory, behavior management procedures, and language development theory. Examples of this approach are Engelmann-Bereiter direct instructional programs such as DISTAR, the Primary Education project of Glazer and Resnick, and language programs such as Carolyn Stern's Preschool Language project.

Open Framework. In this quadrant, representing teacher initiates-child initiates, are preschool programs which subscribe to specific theoretical goals but which depend upon the teacher to create the exact curriculum in which the child participates. These curricula tend to focus upon underlying processes of thinking or

cognition and to emphasize that learning comes through direct experience and action by the child. They omit training in specific areas such as reading or arithmetic, treating these skills as inevitable outcomes of basic cognitive ability. These curricula accept the responsibility of developing the capacity of the child to reason and to recognize the relationship of his own actions to what is happening about him; they tend to be skeptical of claims that solutions to problems or academic skills can be taught directly to preschoolers.

These curricula are usually based upon a theory of child development, the most popular of which is that of Piaget. Using this theory, a curriculum framework is structured so that the teacher has clear guidelines as to how the program should be organized. The curriculum theory delimits the range of preschool activities, giving criteria for judging which activities are appropriate. The framework generally includes directions for structuring the physical environment, arranging and sequencing equipment and materials and structuring the day. The theory also gives the teacher a framework for organizing her perspectives on the general development of children. It is this open framework that provides discipline to the program.

These curricula tend to be oriented toward organizing and utilizing the people involved rather than any special equipment. They demand that the teacher create a transaction between the child and his environment to develop his abilities. And they demand that the child learn by forming concepts through activity, not by repeating what he has been told. The curriculum provides guidelines for establishing these conditions but does not require special materials or equipment.

One of the major advantages of the Open Framework curricula is that while the teacher must adopt a theoretical position and work within its limits, the specific program she creates is uniquely hers, developed as an expression of her attempt to meet the needs of the children in her group. This personal involvement on the part of the teacher means she becomes deeply committed to her program, and it is highly probable that she will continue to implement her program over a long period of time. At the same time, since the curriculum is based upon a specific theory, her expression of that curriculum can be closely examined by others who know both the theory and children to provide the teacher with guidance and assistance, facilitating quality control of the program.

Another advantage of Open Framework curricula is that since the programs focus on the development of basic cognitive processes rather than on social-emotional growth, and since the specific curriculum is created by the teacher by carefully planning activities according to the developmental levels of individual children, they are relatively free of cultural bias and untested assumptions about children's abilities. Thus they can be used effectively with youngsters with varying abilities and from diverse ethnic and socioeconomic backgrounds. The programs are also free of specific linguistic criteria and may be employed with non-English speaking children.

The learning process, structured by the teacher from the Open Framework, is usually paced by the child himself with adaptation of the activities by the teacher to match the child's needs and interests. In well run Open Framework classrooms teachers frequently report their surprise at the minimal discipline and management problems, which would seem to reflect the range of adaptations the framework allows.

In general, these curricula are organized to accomplish cognitive and language development based upon a theory of intellectual development. An open framework is provided for the teacher as a context within which she develops a specific program for the children in her classroom. Learning by the child is the product of his active involvement with the environment structured by the teacher. Examples of programs using this approach are Susan Gray's curriculum for the Demonstration and Research Center for Early Education; Merle Karnes' Ameliorative Preschool program; Herbert Sprigle's Learning to Learn program; and our own Cognitive Curriculum.

Child-Centered. In this quadrant, representing child initiates - teacher responds, are the bulk of the traditional preschool programs as found on college campuses and in national projects such as Head Start. These curricula tend to focus on the development of the "whole child," with emphasis on social and emotional growth. They are characterized by open and free environments with a generally permissive relationship between the teacher and the children and among the children themselves. Content revolves around things of interest or helpful to the child, such as community helpers, seasons, holidays, etc. There is a firm commitment to the idea that "play is the child's work" and recognition of the importance of the child's active involvement in his environment. Considerable attention is given to social adjustment and emotional growth

through fantasy play, imitation of adult roles, rehearsal of peer relationships, and the careful development of the ability of the child to be independent of direct adult assistance.

If theory is involved in one of these programs, it is usually a theory of emotional development. The actual curriculum developed by the teacher comes mainly from her own intuitive understanding of child development on the one hand and her observation of the needs of her children on the other. In general, the hallmark of Child-Centered curricula is an open classroom with children free to express their individual interests and help create their own environment, and with a careful response by an experienced and intuitive teacher who has developed a sense of how to support this creative environment.

The major advantage of the Child-Centered curricula is the complete openness to the needs of individual children. The program may be in direct harmony with the goals of both the parents and the professionals, reflecting the specific concerns of all involved. In addition, Child-Centered curricula are highly reflective of the values given considerable prominence in society as a whole: independence, creativity, self-discipline, constructive peer relationships, etc. Also, since this is the dominant preschool program style, there is a vast reservoir of trained talent throughout the country, in colleges and universities, in organized national associations, and in the large number of programs currently utilizing these methods.

In general, these curricula attempt to assist the child in his overall development through careful attention to his individual needs. The teacher draws upon her knowledge of child development to create a supportive classroom where learning is the result of the child's interaction with the materials, his classmates, and his teacher. While there may be agreement on general goals in most Child-Centered programs, each teacher is responsible for the design of almost everything in her work. Typical of programs using this approach are the traditional nursery schools, the Bank Street College programs, Ron Henderson's Tucson Early Education Model, Glen Nimnicht's Responsive Program, Robert Spaulding's Durham Education Improvement Project, and in spite of the odd "fit," the Montessori programs.

Custodial. In this quadrant, representing teacher responds-child responds, are programs which are of minimal value to children. At best these programs protect the child from physical harm and may be some improvement over extraordinarily bad social conditions. However, with the knowledge and resources available today, there is

little excuse for maintaining custodial centers where teachers and children respond to nothing but physical needs since nothing is initiated.

Programmed, Open Framework, and Child-Centered approaches differ widely on a number of important theoretical and practical issues, including curriculum supervision for staff, adaptability of the program to specific educational needs of minority and regional groups, breadth of curriculum focus, recommended procedures for child management, acceptability of the curriculum to teachers, and assumptions about how children learn. The basic question is, however, how does the particular curriculum model effect the immediate and long-term intellectual and academic performance of participating children? While there is considerable debate over the criteria to be employed, it is generally accepted that third-grade achievement scores on standardized tests are appropriate. There is less agreement about the use of intelligence tests such as the Stanford-Binet as a measure of immediate outcome at the end of the preschool experience. At the present time, however, no acceptable alternative measures are available for reliably measuring intellectual development or the more general capacities from problem-solving ability to creativity. The scores from Piaget-based measures of cognitive abilities tend to be so closely correlated with Stanford-Binet scores as to make their use questionable as a substitute assessment procedure, though they may be invaluable in the design of research projects using Open Framework curricula. In any case, there is little basic information about the relative effectiveness of particular preschool curricula.

A few years ago, a review of preschool research found that the few programs which were effective in obtaining immediate gains on intellectual measures and some indication of later academic success could be classified as Structured (a category covering for the most part the Programmed and Open Framework curricula). "The conclusion is that preschool projects with the disadvantaged child must provide planned teacher action according to a specific developmental theory in which the primary goals are cognitive and language development . . . The traditional nursery school methods [a category covering Child-Centered] . . . are ineffective in accomplishing the basic goals of preschool intervention with the disadvantaged child." (Weikart, 1967) A more recent review of several studies of Programmed, Open Framework, and Child-Centered curricula reached the same conclusion: "Preschool programs . . . that provide highly structured experiences for disadvantaged children are more effective in producing cognitive gains than

programs lacking these characteristics." (Bissell, 1970) While such reviews underscore the ineffectiveness of Child-Centered curricula with disadvantaged children, there is still the question whether Programmed or Open Framework models are more effective.

In an effort to answer this question, the Ypsilanti Preschool Curriculum Demonstration Project was established in the fall of 1967. The programs selected were a Cognitively Oriented curriculum (an Open Framework model) and a Language Training curriculum (a Programmed model). The Cognitively Oriented curriculum had been developed over the five years of the Ypsilanti Perry Preschool Project (Weikart, 1967, 1970). This is a carefully structured program based on methods of "verbal bombardment" of our own design, principles of socio-dramatic play as defined by Sara Smilansky, and principles derived from Piaget's theory of intellectual development. The Language Training curriculum was developed by Bereiter and Engelmann (1966) at the University of Illinois. This is a task-oriented program employing techniques from foreign-language training; it includes the direct teaching of language, arithmetic, and reading. In order to complete the spectrum, a third program was established that would represent the traditional approach. This program, the Unit-Based curriculum (a Child-Centered model) emphasized the social-emotional goals and teaching methods of the traditional nursery school.

Children in the curriculum study were functionally retarded three- and four-year-olds coming from disadvantaged families living in the Ypsilanti school district. They were stratified according to sex and race and randomly assigned to one of the three treatment groups. Two teachers were assigned to each curriculum model after they had an opportunity to express a preference. They taught class for half a day and then conducted a teaching session in the home of each of their children for 90 minutes every other week. The home teaching was executed in the same curriculum style as the classroom program the child attended. Essential to the demonstration aspect of the project was that all three programs had clearly defined weekly goals. The curriculum implementation followed a carefully planned daily program designed independently by the three teams of teachers to achieve the goals of their own curricula. This provision for teacher involvement was a crucial aspect of the overall project.

Much to our surprise, each of the three programs did unusually well on all criteria (Weikart, 1969), greatly exceeding improvement

expected from general habituation and rapport leading to better test taking ability. More importantly, the initial findings indicated no significant differences among the three curricula on almost all of the many measures employed in program assessment: several intelligence tests (average Stanford-Binet IQ gains in the three programs by three-year-olds of 27.5, 28.0, and 30.2 points in the first year), classroom observations, observations in free play settings, ratings of children by teachers and independent examiners, and evaluations by outside critics. These data were essentially replicated at the end of the project's second year. The basic conclusion is that the operational conditions of an experimental project are far more potent in influencing the outcome than the particular curriculum employed. The curriculum is more important for the demands it places upon the project staff in terms of operation than for what it gives the child in terms of content. Specifically, I would make two points regarding curriculum and the education of disadvantaged children.

1. Broad curricula are equivalent. As far as various preschool curricula are concerned, children profit intellectually and socio-emotionally from any curriculum that is based on a wide range of experiences. In almost the sense that Chomsky (1966) uses in talking about the development of linguistic competence, a child has the potential to develop cognitive skills and good educational habits if he is presented with a situation which requires their expression. Kohlberg (1968) concludes that a child needs broad general forms of active experience for adequate development of his cognitive abilities; a variety of specific types of stimulation are more or less functionally equivalent for development. In short, no specific curriculum has the corner on effective stimuli, and children are powerful enough consumers to avail themselves of what the market offers.

2. The curriculum is for the teacher, not the child. The primary role of curriculum is (1) to focus the energy of the teacher on a systematic effort to help the individual child to learn, (2) to provide a rational and integrated base for deciding which activities to include and which to omit, and (3) to provide criteria for others to judge program effectiveness so that the teacher may be adequately supervised. The successful curriculum is one that permits this structuring of the teacher to guide her in the task of adapting the theory she is applying to the actual behaviors of the children. An unsuccessful curriculum is one that permits the teacher to give her energies to areas unrelated to her interaction with the child within the theoretical framework or fails to give her clear guidelines for using her time in planning, in interaction with children, and in availing herself of critical supervision.

The basic implication of the findings of the Curriculum Demonstration Project after two years is that a shift in focus is necessary for preschool education. The heavy emphasis on curriculum development, while important, has greatly overshadowed the need for careful attention to the other components of program operation. Apparently when these components, including what we call the "staff model", are held as constant as possible, immediate results are not affected by the curriculum model.

But I have problems with my conclusions at this point, because by the third year of the study, while there were no significant differences on most general measures, the unit-based program was dropping out of the race gradually but surely, especially on a highly sensitive cognitive measure, the Stanford-Binet.

Table 3 presents the findings from the project on a year-of-operation basis. The waves of children entered as three-year-olds and attended the preschool for two years. The classes were organized across ages; that is, Wave 5 as four-year-olds and Wave 6 as three-year-olds attended school together, and the next year Wave 6 as four-year-olds and Wave 7 as three-year-olds attended school together.

Insert Table 3 about here

By the second replication in the third year of the project the unit-based program was not matching the outstanding record it had established during the first year, especially with the three-year-olds. At this point, given the purpose of the study -- to compare three basic curriculum models -- and given the general findings in the field, I could conclude that this Child-Centered curriculum didn't have the necessary power to make a significant impact on important dependent variables. Further, the use of a Child-Centered curricula with disadvantaged children could, as in other studies of this nature, be seriously questioned. However, the outstanding performance of the unit-based program the first year, achieving parity with the other curricula at the three-year-old level, and the fact that the drop occurred gradually rather than precipitately suggests problems other than simple statistical variation. It has therefore seemed important that the issues be explored more deeply.

When we took a closer look we found that while there are some inherent difficulties in the Child-Centered model, the fault rested with me as project director. The issue rests in the "staff model," for differences in curriculum results occurred only when

operational problems were left unresolved. To illustrate this key point I would like to present a description of the way the teachers in the three programs worked over the three years of the project; this was prepared by the supervising teacher with whom I have worked for the last nine years, Mrs. Donna McClelland. Then I would like to present the statements prepared by the two teachers in the unit-based program. These descriptions were written at my request three months after the termination of the project with the instructions "to think back to how you felt about the years in the project and to note each year in succession."

The teachers have been assigned letters, which may be found in Table 3, indicating the years they taught. The unit-based teachers taught together for the entire three years of the project.

Cognitive Curriculum: First Year, 1967-1968. Mrs. A. and Mrs. B. seemed to look forward to teaching but at the same time they seemed apprehensive and insecure about it. They knew the project had a heavy investment in the curriculum and that the program had a theoretical framework. They wanted training. However, the training they received was very limited. We gave them books to read, written materials from the Perry Project, and some ideas about setting up the classroom. Because of our limited knowledge, we only gave them about half of the curriculum framework -- the cognitive goal areas. Mrs. B. was a brand new teacher, confident, with a lot of warmth and concern for children, extremely intelligent, and able to pick up the idea of the curriculum quickly. Mrs. A. was an experienced teacher; she cared about the children. She was a good teacher in another setting who wanted to learn the framework. She tried, but she just couldn't immerse herself in it like Mrs. B. did. I think she failed because we didn't know how to help her.

Both teachers worked very hard, and they were almost too rigid about their plans. They discussed the children, planned together, and shared ideas. It was a shared leadership. Mrs. A. with her years of experience contributed many ideas for activities, and Mrs. B. was secure enough to be able to use the ideas within the proper context. Even though she respected Mrs. A. as an older, more experienced person, Mrs. B. was forceful enough to speak up when she felt she was right. The curriculum made sense to Mrs. B. very early. She committed herself to reading and learning more about it and demanded supervision from me.

Cognitive Curriculum: Second Year, 1968-1969. The beginning of the second year brought a new teacher to the classroom,

Mrs. C. She was a beginning teacher, had little confidence in her own ability, and she leaned heavily on Mrs. B. She was eager, excited about the curriculum, loved the children, was enthusiastic, devoted a great deal of time to planning and discussing the children with the other teacher, and she spent much extra time preparing materials. At mid-year when Mrs. B. left the classroom to become a project consultant, Mrs. C. was capable of taking the leadership of the teaching team. Although she understood what she was doing, she would not assume the leader role. Mrs. D., the new teacher, supposedly had some background in Piagetian theory, but she turned out to be strongly entrenched in the traditional approach. She wanted the children to learn by themselves once she provided the materials, and she wanted them to be creative above all. She didn't see that the cognitive curriculum started from the bottom to make it possible for children to operate that way. Mrs. C. was very influenced by Mrs. D. and they were off on all kinds of side roads with nothing much accomplished the rest of the year. Mrs. D. was strong-willed and did things her way, which meant she had a great deal of trouble accepting the authority of the supervision provided. Mrs. D. also seemed threatened by the children, not knowing how to manage them when she was confronted with a group teaching situation where she was responsible for directing the activity and holding the attention of the children. She preferred the freer worktime situations where the quality of her interaction could be different.

The teachers planned together well, talked everything over, wrote everything together. There was so much togetherness it was inefficient.

Cognitive Curriculum: Third Year, 1969-1970. The third year started about where the second year left off. The teachers were the same with one major difference. They knew they had to operate the cognitive program in a particular way after a confrontation with the director at the end of the second year. They were subdued, but they seemed to want to successfully operate the program. It was necessary to be very direct with them at times to keep them on the track and to encourage Mrs. C. to assert herself and not let Mrs. D. dominate her.

As the year progressed Mrs. D. learned to manage the children and not blame all unpleasant behavior on a child's emotional state. She learned to work on the level of the children. She began to understand the cognitive framework. When she didn't seem to understand, she tried hard to accept the authority of the supervisor. Mrs. C. began to speak up when she had an opinion and even sided with the supervisor occasionally.

Whatever time and energy that was left went to improving implementation of the curriculum.

Language Training Curriculum: First Year, 1967-1968. Both Mrs. E. and Mrs. F. seemed eager to try the Language Training program. Each had a strong interest in teaching language and enthusiastically approached the task of outlining what they would teach from the book Teaching Disadvantaged Children in Preschool. It was a tremendous task, but the book was all they had from which to start planning. Mrs. E. outlined and taught language, and Mrs. F. outlined and taught reading. Arithmetic was shared. The teacher-aide was assigned the semi-structured time which included worksheets from the language, reading, and arithmetic lessons, reading stories and juice time. The initial plan was to switch the teaching areas at mid-year so that both teachers could have a turn teaching language. They gave up the idea because planning was so time consuming. That decision seemed to set the tone for the whole year: They worked hard and diligently but separately. While they spent hours planning, they seldom planned together or talked together about the children even for the purpose of home visits. Both were extremely involved with the content that they were teaching, but somewhat detached from the children. They tried to follow the book exactly and viewed the group lessons and music as the important teaching times. The rest of the time the children were in school was left up to the aide. As a result, transitions, juice, and semi-structured time were pretty chaotic until the aide learned to manage the children. If the teachers finished teaching ahead of schedule they sent the children home early.

Both teachers had difficulty at first managing the children during group teaching. The children were so young and the tasks required sitting quietly and attending while the teacher talked or wrote on the blackboard.

Mrs. F. was competent, self-assured, cool and aloof, solving her own problems and rarely asking for help. She always wrote plans, or worked on a home visit report whenever the staff met together. She seemed to relate to the children and the mothers the same way. She did what was expected of her and did it extraordinarily well but seldom allowed herself to become personally involved.

Mrs. E. was warmer and more involved with the children and the mothers. For example, she initiated and did most of the planning for the Christmas party for the children and their mothers.

She became very excited about the language lessons. She had lots of ideas and spent extra time thinking of new and better ways to present the materials. She always seemed eager to talk to me about what she was doing, and she was always very open and receptive.

Language Training Curriculum: Second Year, 1968-1969.

The second year began with two new teachers. Again, both teachers were interested in language development and eager to try the Language Training approach. Much of the organizational work had been done the year before. The lessons were outlined, and new materials from Illinois had been incorporated. Mrs. H. spent two or three days the spring before in the classroom with Mrs. E. learning the program. Mrs. G. came with some classroom experience and knew how to structure the day for the children so that the whole day was a learning experience. The teachers liked each other and enjoyed working together. Though one teacher taught reading and the other language, they discussed the progress of the children in each of their groups and planned together. They added two additional activities to their schedule: 15 minute playtime the first thing in the morning, allowing children to use puzzles, small blocks, beads, and other small educational toys freely, and a planned whole-group semi-structured time. They added this time because they felt the children needed to learn to cut, paste, color, and to play some group games. They also added a regular story time at the end of the day -- Language Training style, of course. These additions allowed them to be creative and to make the program more compatible with their personal style. The director relaxed about these changes after a consultant from the Illinois group gave her approval. The aide still handled semi-structured time, helped with juice, and was given an arithmetic group to teach. The aide and the teachers were very much involved with the children throughout the day.

The leadership was shared equally by the teachers. They were both lively and dynamic. They tried to make the room attractive for the children, using pictures centered around what they were teaching and putting the children's art work up. They both put a great deal of extra time and effort toward planning parent meetings and toward making school interesting and fun for the children.

At one point there was dissatisfaction with the research aspect of the project, as the teachers felt they were not given enough information about the research. They were open and verbal about their complaint and a meeting was arranged to discuss this, which seemed to solve the problem.

Language Training Curriculum: Third Year, 1969-1970. The Language program started the third year with one new teacher. The new teacher was a friend of the hold-over teacher, they liked each other and worked well together. The quality of planning and involvement with the children continued at a high level.

The new teacher had been working with junior-high-level kids before coming to the preschool, and she found it necessary to change her teaching style. Because of her work having been with kids of the same background as the preschool children, she felt the goals of the language training program were very important. The earlier the children were reached, the better. She took on the task of learning the program wholeheartedly and was able to adapt to and teach from the "cookbook."

Unit-Based Curriculum: First Year, 1967-1968. Mrs. J. and Mrs. K. seemed motivated to provide a good school experience for the children. Mrs. J. seemed to have more of an idea how to go about setting up the program, assumed the leadership, and appeared to generate most of the enthusiasm. Mrs. K. was very emotionally involved with personal problems which were almost more than she could cope with at the time, and for a while she seemed grateful for the structure Mrs. J. provided. They talked together about the children and shared ideas when planning activities and working out classroom problems. As time went along Mrs. K. assumed more responsibility for the classroom and seemed to assert herself more. They both spent time outside of school hours preparing materials for the classroom in order to provide the best possible experience for the children. They worked diligently on group meetings for their mothers, preparing displays of the children's work and providing fancy refreshments. They liked having a classroom to themselves where they could organize the room and use the materials in the way they felt was appropriate for their program. They had close contact with me, which seemed to be very important to them. Both were there regularly, and neither was sick more than a day or two.

They allowed the children a lot of freedom and had two or three children who were obvious discipline problems. They solved this by providing more structure through the daily routine and limiting the materials in the environment. Both seemed to like the children and to enjoy working with them.

The transfer of the class to another schoolhouse in mid-year to provide additional space for their program was traumatic for them.

First, they had to change class time from morning to afternoon, forcing a reorganization of their whole schedule. Second, their classroom had to be structured in a different way because they now shared the room with the cognitive program. Third, they no longer had the same amount of contact with me. As a result, they seemed to feel left out and alone. Fortunately the move came late in the year.

Unit-Based Curriculum: Second Year, 1968-1969. The program began the second year on about the same plane it ended the first year, with the teachers somewhat discouraged and disgruntled. They became more and more aware of the emphasis put on the cognitive program by the many visitors to the project. They did less formal planning and seemed to become less and less enthusiastic as time went on. Mrs. J. seemed to reflect this feeling more than Mrs. K. Mrs. K. seemed to get more satisfaction from her work with the children than Mrs. J. Mrs. J. began having car trouble, coming late, and going home just a little earlier than usual, leaving Mrs. K. to clean up and get the classroom ready for the children. Mrs. K. began to resent Mrs. J.'s behavior, but she would not be open about it and discuss it with her. I tried to help by offering to discuss it with the two of them. Mrs. K. became very upset and begged me not to do this. She seemed to feel it would make the situation worse. The addition of a special consultant just for their program did not help. Mrs. K. took over more of the planning for her own activities in the classroom, and Mrs. J. planned her own activities. There was little or no communication between the two. Mrs. J. began a series of illnesses and was out of the classroom a good deal. I talked to Mrs. J. about her responsibility to Mrs. K. for sharing the planning and some of the classroom preparation, but it didn't help. During this period Mrs. B. became a consultant and left the classroom. Mrs. J. seemed to feel she should have been considered for such a position and lost all interest in working with the children. The illnesses increased. In spite of all this, the classroom hung together and the children seemed to be happy and learning. Mrs. K. showed more initiative, asserted herself more, but still refused to discuss her feelings with Mrs. J.

Unit-Based Curriculum: Third Year, 1969-1970. The last year started where the second left off; attitudes were at a low level. Both teachers felt their program was a control program and that no one in the project really cared about it. Mrs. J. continued to be sick more than was reasonable, and Mrs. K. just planned from day to day. She continued to devote her time to the children when they were in the classroom. Mrs. J. busied herself with "urgent" telephone calls to mothers and little "picking up" chores, almost anything to keep from interacting with the children. It was necessary

to let Mrs. J. know I was checking her absence forms to make sure all were counted and to speak to her about leaving early and coming late. We did allow the unit-based program to meet in the morning the third year, which at that point did not help a lot.

Toward the middle of the year when the teachers began their writing for the curriculum booklets and the London conference was in view, things picked up some. More interest in planning together seemed to be generated, but it was spasmodic. It continued that way much of the rest of the year. Surprisingly, the classroom still looked pretty good with the kids happy and learning.

Unit-Based Curriculum: First Year, Mrs. K. Having never taught at the preschool level before, I found that I needed a great deal of help just learning how to handle the children. The classroom was too small, only adding to the general confusion. We changed the routine frequently, and eliminated many toys. Later in the year, we moved to another school where we were provided with more space.

I felt confused, anxious, bewildered, frustrated, and depressed because I didn't feel that the children were really learning anything.

Unit-Based Curriculum: Second Year, Mrs. K. I started out this year with a great deal of enthusiasm, I tried new ideas, established limits, discipline problems eased, children were more responsive.

The program goals, however, were still fuzzy. We were advised to concentrate on socialization among children and to just play with them. We did!

The interruptions in the classroom from researchers and visitors were annoying. It was very difficult to concentrate on the children when there was so much confusion.

Unit-Based Curriculum: Third Year, Mrs. K. There was obviously very little enthusiasm for our program, but I still felt that it was basically a good program. I also felt we could offer more in educational growth. We were reluctant to try anything new because it might be too similar to goals in other programs.

We used the same techniques and ideas developed over the past two years. It seemed rather dull to me, but the children had always done well in the past. Besides I was tired of trying to push, push, push. At times I felt that I was the only one interested in the children's development. It was very difficult to talk about the children

with Mrs. J. because she simply wasn't interested. She almost seemed to avoid the classroom whenever she could. It really bothered me that she didn't interact with the children more. It was also discouraging that we often did not have a definite plan to follow nor definite goal areas to work in.

Unit-Based Curriculum: First Year, Mrs. J. Year one of the project was probably the best from my point of view. Everything was so new and the whole idea sounded rather fascinating. Then, too, I couldn't help but be very enthusiastic because it seemed that I, as a teacher, was a vital link in the whole operation. The staff was small (or at least seemed so to me), and staff meetings and contacts were friendly and informal.

I think another reason why I look back on the first year as most enjoyable is that policies, etc., were not so hard and fast. Ideas were constantly being introduced, discussed, and decided upon. And, whether this was actually true or not, I felt a part of it. Also, I felt I was a part of a developing curriculum since we were not given a book as in the language training curriculum, nor did we have a previously developed curriculum as in the cognitive program. Rather, we were more or less on our own to choose things we felt were important.

It's difficult to recall a lot of feelings I had during that first year. One thing for sure, though, I remember that our main focus was the children and our first job was teaching. To this end we had adequate time for planning, evaluating, meetings with the supervisor, etc.

To sum up the first year is to have favorable thoughts. There were three programs in progress yet I never felt any competition between them. Rather, I felt very strongly that what I was doing was helping the kids and the other programs were helping also, but we had different approaches. Thinking about how much the kids gained or which program gained the most was irrelevent. I was doing what I felt was best within the loose traditional framework from which we operated.

Unit-Based Curriculum: Second Year, Mrs. J. Year two to me represents the year the organization grew. Everytime we had a meeting new faces seemed to ease out of the woodwork. To this day, I do not know what some of the new faces did or how they fit into the overall picture. (I don't know how much of this staff was anticipated at the onset of the project. Knowing what the project goals were and just what the

overall picture was like would have put many things in perspective.) The new faces meant more formal meetings and also what I felt was a real communication gap. I felt that at times the right hand didn't know what the left hand was doing, yet the right hand made the decisions for the left hand to follow.

Research played an increasingly important role this year. I knew from the onset of the project that it was research oriented. I knew, of course, that my role in the project was not to be a researcher but a teacher. Yet it became difficult to effectively carry out this role at times. I felt this was very unfortunate, for I think that a more cooperative attitude should have been established, teachers and researchers should have been working together as a team. We were supposed to be a team since we were members of the same project, but at times it appeared that major divisions existed: the teachers felt the kids were most important while the researchers placed inanimate data as number one.

Unit-Based Curriculum: Third Year, Mrs. J. The third year of the project was the most dissatisfying of the three. For one thing, it seemed like there was an underlying current that this was the last year -- almost like, this is the last year so let's hurry up and get it over with. Perhaps I generated a lot of this feeling within myself, for many times I felt that I was fighting a losing battle. It seemed quite obvious that the unit-based curriculum was one step under the low man on the totem pole. Our weekly curriculum meetings with our supervisor vanished and it seemed we were left to do whatever we chose. Whatever we did was "OK," yet I had the feeling that everyone felt that this curriculum wouldn't make it anyway. I found many of these views most frustrating for I felt that if this was going to be a valid research project, one program should not be favored over the others. Frustrations were very high at times for I felt this situation was very obvious and accepted. So the unit-based curriculum went on its merry way.

Writing played a significant role during the third year, and I welcomed this. We really had an opportunity to discuss more things, place some priorities, and generally get a better understanding of what we were actually doing in the classroom. Although we constantly handed our materials in for the booklet, I thought that ultimately the vast majority of the writing would be placed in the file (under dead), which turned out not to be true.

Outside demands were high the last year. We were expected to complete materials for research as usual. Added to this was the filming and people coming into the classroom collecting various kinds of information. Here again, I felt a more cooperative attitude could

have been established, making everyone's work more pleasant.

Of all the feelings that stand out from the third year, the most emphatic one is the feeling of being "the forgotten program" and the feeling that there wasn't much concern about what we did. It's difficult to keep enthusiasm high when confronted with such thoughts. Nevertheless, I did do the best I could.

How Can We Guarantee Preschool Effectiveness?

While the data are not complete for the Curriculum Demonstration Project, and we must await the long-term follow-up study as the children progress through elementary school, I find myself at a very different place from that I had projected back in 1966 when the project was conceptualized. I had expected to find immediate differences on most measures among the three curriculum models. Instead I found that during the time I was able to maintain equal momentum and staff commitment for the three programs, we obtained equal results on most measures, from standardized intelligence tests to classroom observations and teacher ratings. When this momentum was lost in the unit-based program, as can be seen in the above reports, the data began to shift. Clearly, the results of the different programs directly reflect staff model not curriculum model effects. While the unit-based teachers and Mrs. McClelland indicate that the classes were proceeding happily enough to look good to observers, the heart of the operation was missing and the children were marking time. From this situation, two essential points emerge regarding the operation of effective preschools.

1. Planning. Detailed planning for daily operation is absolutely critical. Experienced teachers can "wing it" without plans by following routine practices which both they and the children slide into without trouble. However, the moment planning as an organized force ceases or diminishes in its central focus, program quality drops. Planning brings the adults in the program together and forces an integration of their ideas so that they respond with purpose to the children. It produces a forward momentum, a pacing to the program that creates novelty and excitement for the children as well as the staff. It serves as a clearing house for interpersonal feelings that make the difference in how the staff relate to one another and the children. It produces in teachers a clarity of perception of each child, especially when part of the process is evaluation of completed curriculum activities. It provides a forum where the ideas generated by the method or theory being followed can be expressed and discussed

to give an overview and total direction. Basically, it is highly satisfying to outline the major problems children face in dealing with the world as represented by the classroom and plan ways of facilitating the resolution of these problems. However, planning is also one of the most difficult things to ask of a teaching staff.

From reading the evaluations of the supervisor it is apparent that the three programs planned differently. In the Programmed model, planning did not have a central role, because the lessons had already been planned for the teachers by the program developers. Since each teacher had to plan for her own groups, and subject areas were divided between them, planning was done individually in this program. In the Open Framework and Child-Centered models, team planning was a daily function of a teaching staff that worked in the classroom. This approach is obviously vulnerable to problems resulting from interpersonal conflict, the more so if, as in the unit-based program, there are problems with supervision.

2. Supervision While planning integrates the basic content and expression of the program, supervision makes it happen. As problems developed in the unit-based program, supervision became more difficult and was gradually reduced. I, as project director, failed to recognize the importance of what was happening and to act forcefully to redirect the situation.

Adequate supervision forces the teachers to consider the central issues of their curriculum model. It helps the staff to recognize when they are getting off the track or marking time. The supervisor gives direct assistance to the classroom team by underscoring the real problems in the classroom. She reviews the plans the teachers have prepared and observes their implementation in the classroom. The supervisor raises questions for the staff about program operation, planning, and general functioning. She is the "referee" for the many problems within the team, bringing difficulties into the open rather than allowing them to be smoothed over; since genuine problems with children and among staff are the basis for program improvement, to smooth them over is to avoid the opportunity for development they present. The supervisor provides inservice training based upon the knowledge she has gained from her classroom observations. This training can include demonstration teaching and video taping of key lessons or activities. On the whole, the supervisor serves as the balance wheel in the operation of the curriculum model, maintaining through supportive services, dedication, and knowledge the momentum that the staff has generated.

These functions were carried out to differing degrees in the several models. The Programmed curriculum needed the least amount of attention from the supervisor; little beyond the usual function of meeting with the teachers to insure adherence to the model was required of her. The teacher-proof scripted materials effectively limited the range of potential behaviors of the teachers and directed their energy. On the other hand, the Open Framework staff needed and received considerable attention to integrate the theoretical base of their program with the classroom activities. The Child-Centered program proved difficult to supervise. The program was based on the general knowledge of child development of the two staff members, and they were encouraged to design their own program, emphasizing those things they thought important. This freedom of the teachers limited the supervisor's role to general advice. The global and imprecise nature of the unit-based curriculum may offer one reason why it was so hard to supervise.

In order to operate an effective preschool, then, the conclusion suggested by the findings of the Curriculum Demonstration Project is that any project must have an effective staff model which provides at least two major elements: planning and supervision. This finding suggests a third dimension for the diagram presented in Figure 1; that is staff model intensity. It has been our experience that whether a curriculum is Programmed, Open Framework, Child-Centered, or eclectic, there must be a high intensity of planning and supervision in one form or another to assure success. The unit-based curriculum was not entirely successful because the intensity of planning and supervision was not sustained.

Conclusions

What amazes me again and again as I read over the critiques of the three years of the Curriculum Demonstration Project and think back over the last eight years of preschool research is the naivete and even egotism with which I and perhaps some of my fellow researchers tended to approach the problems of curriculum, teaching, and learning for disadvantaged children. We constantly talked about the things that "they" are going to have to do in order to learn. And "they" are both the children and the teachers. We proceeded to develop materials and sophisticated devices to help us ritualistically enact some of our pet theories. When these procedures didn't work it was always the child or the teacher who failed, never us and certainly never our model. Of course, there are better ways of doing things, better equipment, books, procedures; but better because they help us do the job more efficiently, not because they

are new or different. However, these things are not central to the good that can happen when an adequately organized group of teachers tackles the problems of nurturing young children.

What the data from this Curriculum Demonstration Project do for me is force me to take a close lock at my personal philosophy of education; that is, how I feel about my role in working with teachers and children, and how I feel about basic values such as creativity, academic skills, independent thought, cooperation, initiative, and responsibility. For these data say to me that I'm free to select or mix any curriculum model which is compatible with my basic educational goals and the goals of the group I serve. And I can make that program effective by employing an intense staff model. It's clear that I'm still talking about short-term results because the long-term data are not available. It's also clear that certain curricula are much more difficult to implement than others. But I do not have to wait for the curriculum; I am free to develop or employ any curriculum that I believe can be adapted to the needs of the children and the requirements of the staff model.

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INTRODUCTION TO TABLES

There were five project replications between 1962 and 1966, with approximately twelve children per group entering each year. The declining group sizes in the tables reflect the fact that groups starting in the last replications had not yet reached the higher grade levels at the time of analysis.

The data were collected at the time children entered the preschool and every Spring thereafter for most instruments. The following notation denotes collection times:

Preschool	FEY	Fall entering year
	SEY	Spring entering year
	S2Y	Spring second year
Public School	SKG	Spring kindergarten
	S1G	Spring first grade
	S2G	Spring second grade
	S3G	Spring third grade

Empty columns in the tables indicate that data were not collected for a particular instrument at the time indicated by that column. Also, the first year's experimental and control groups contained some four-year-old children who only received one year of preschool, deflating the Spring second year group size somewhat. All other children entered at age three and had two years of preschool.

Table 1

STANFORD-BINET IQ RESULTS
Experimental vs. Control
Summary of Group Sizes, Group Means, and F-Ratios

	TIME OF DATA COLLECTION						
	FEY	SEY	S2Y	SKG	S1G	S2G	S3G
GROUP SIZE:							
Experimental	58	58	44	45	33	21	13
Control	65	65	49	52	37	24	15
GROUP IQ MEANS:							
Experimental	79.7	95.8	94.7	90.5	91.2	88.8	89.6
Control	79.1	83.4	82.7	85.4	83.3	86.5	88.1
F-Ratio	<1	39.78	25.36	4.58	8.26	<1	<1
Significance	N.S.	$<.01$	$<.01$	$<.05$	$<.01$	N.S.	N.S.

GRAPH OF STANFORD-BINET GROUP MEANS
Experimental vs. Control

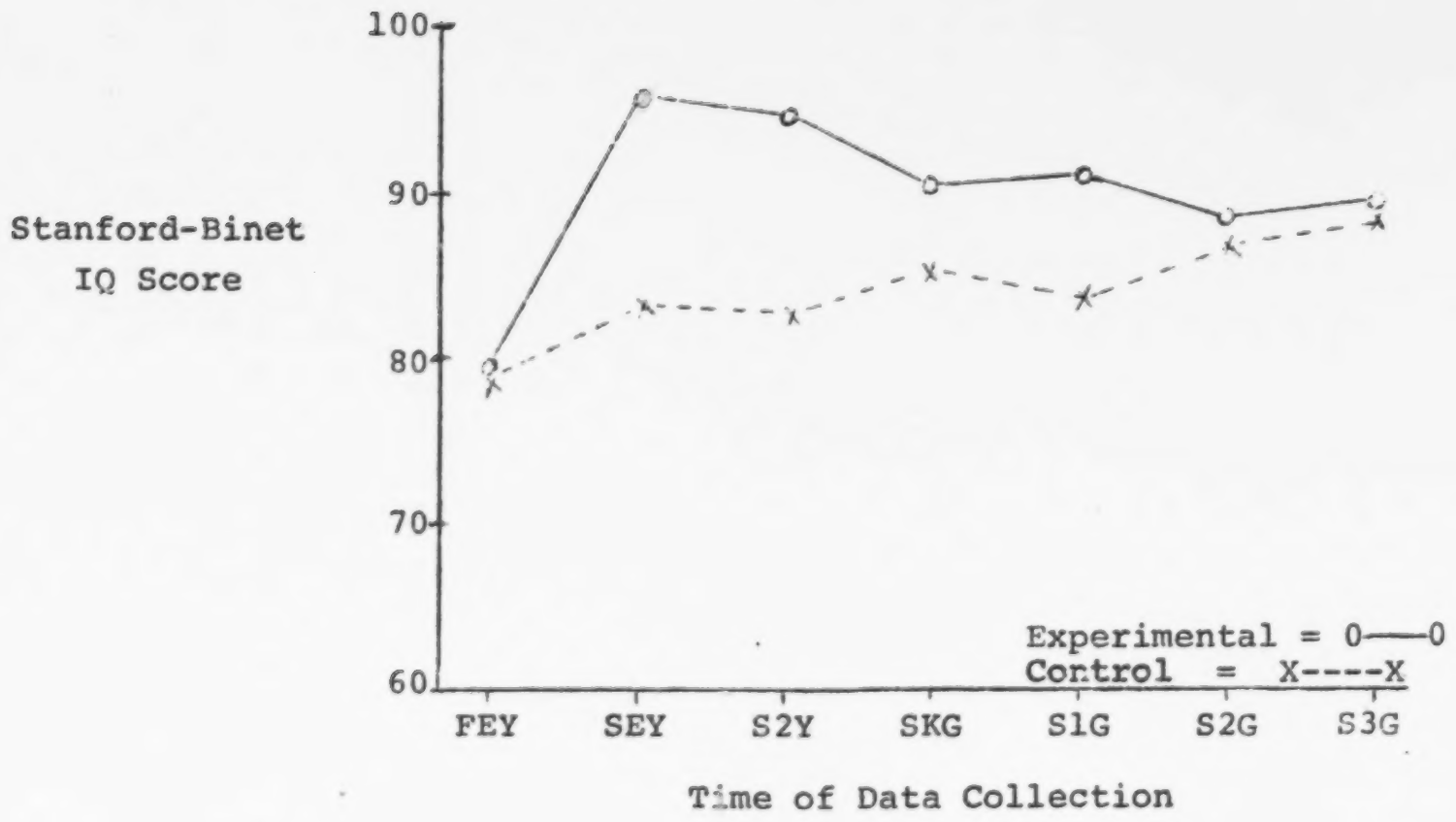

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Table 2

CALIFORNIA ACHIEVEMENT TEST TOTAL BATTERY RESULTS
Experimental vs. Control
Summary of Group Sizes, Group Means, and F-Ratios

	TIME OF DATA COLLECTION						
	FEY	SEY	S2Y	SKG	S1G	S2G	S3G
GROUP SIZE:							
Experimental					33	20	13
Control					37	23	15
GROUP RAW SCORE MEANS:							
Experimental					90.7	146.0	199.9
Control					71.5	121.2	116.5
F-Ratio					4.27	2.92	11.61
Significance					$<.05$	N.S.	$<.01$

GRAPH OF CAT GROUP MEANS
Experimental vs. Control